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Applicant: Michael A. Bowling
Docket: 12206.1US01
Title: RANDOM NUMBER GENERATOR FOR GAME PLAYING; AND METHODS

CERTIFICATE UNDER 37 CFR 1.10

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- ☒ Utility Patent Application: Spec. 11 pgs; 20 claims; Abstract 1 pgs.
The fee has been calculated as shown below in the 'Claims as Filed' table.
- ☒ 3 sheets of formal drawings
- ☒ Verified statement to establish small entity status
- ☒ A signed Combined Declaration and Power of Attorney
- ☒ A check in the amount of \$395.00 to cover the Filing Fee
- ☒ Other: Information Disclosure Statement (37 C.F.R. 1.97(b) with Form 1449 and copies of cited references
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CLAIMS AS FILED

Number of Claims Filed	In Excess of:	Number Extra	Rate	Fee
Basic Filing Fee				\$395.00
Total Claims				
20	20	0	x 11.00	= \$0.00
Independent Claims				
2	3	0	x 0.00	= \$0.00
MULTIPLE DEPENDENT CLAIM FEE				\$0.00
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INDEPENDENT INVENTOR(S)

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 C.F.R. 1.9(f) AND 1.27(b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 C.F.R. 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled RANDOM NUMBER GENERATOR FOR GAME PLAYING; AND METHODS described in

- a) ☒ the specification filed herewith.
b) ☐ provisional application serial no. _____, filed _____.
c) ☐ non-provisional application serial no. _____, filed _____.
d) ☐ patent no. _____, issued _____.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 C.F.R. 1.9(c) if that person has made the invention, or to any concern which would not qualify as a small business concern under 37 C.F.R. 1.9(d) or a nonprofit organization under 37 C.F.R. 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

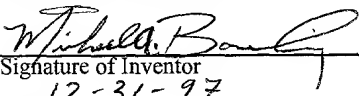
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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereof, or any patent to which this verified statement is directed.

Michael A. Bowling
NAME OF INVENTOR

Signature of Inventor
12-31-97
Date

NAME OF INVENTOR	NAME OF INVENTOR	NAME OF INVENTOR
Signature of Inventor	Signature of Inventor	Signature of Inventor
Date	Date	Date

Field of the Invention

Background of the Invention

The traditional playing die is a cube-shaped, six-sided member. Through the years, dice of more than six sides have been developed, as the demand in various games of chance have necessitated. In U.S. Patent 1,271,551 to Ebner, et al., a game die is disclosed in the form of an octagonal, rolling cylinder. U.S. Patent No. 5,150,900 to Onzo discloses a heptahedron-shaped rolling cylinder for generating a random number.

Improvements are desirable.

Summary of the Invention

20 The present invention is directed to a die construction that substantially obviates
one or more of the problems due to the limitations and disadvantages of the prior art.

To achieve the advantages of the invention, and in accordance with the purposes of the invention, as embodied and broadly described herein, the invention comprises a die construction. The die construction includes a body having first and second, opposite end caps and an extension member therebetween. The extension member has a first number of discrete facets and no more than the first number. Each of the discrete facets is identically shaped and have equal surface areas. The first end cap has a second number of discrete facets and no more than the second number. The second number is one-half of the first number. Each of the first end cap discrete facets is identically

shaped and has an equal surface area to one another. The second end cap has the second number of discrete facets, that is, the same number as the first end cap, and has no more than the second number. Each of the second end cap discrete facets is identically shaped as the first end cap discrete facets. Each of the second end cap discrete facets
5 has a surface area equal to a surface area of each of the first end cap discrete facets.

Preferably, each of the extension member discrete facets includes printed indicia thereon. For example, this may take the form of a numbers or other markings, such as polka dots. The printed indicia indicate what number has been randomly generated.

In preferred arrangements, each of the extension member discrete facets is
10 tapered. More preferably, each of the extension member discrete facets is triangular-shaped.

In certain preferred embodiments, each of the first and second end cap discrete facets is tapered. More preferably, each of the first and second end cap discrete facets is triangular-shaped.

15 In one preferred embodiment, the number of facets of the extension member is six. In such arrangements, the second number, that is, the number of discrete facets on the first end cap, is three. Three is also the number of discrete facets on the second end cap.

In other preferred arrangements, the number of facets of the extension member is
20 10, while the number of facets of each of the end caps is five.

In still other arrangements, the number of discrete facets of the extension member is 20, while the number of discrete facets for each of the end caps is 10.

Preferably, a ratio of a surface area of each of the extension member facets to a surface area of each of the first end cap discrete facets is about 2-3:1.

25 In preferred arrangements, the number of facets of the first end cap is equal to one-fourth of the total number of facets on the entire die construction. That is, the number of facets of the first end cap may be determined by totaling the number of facets of the first end cap, plus the number of facets of the second end cap, plus the number of facets of the extension member and then dividing that total by four. In such
30 arrangements, the first and second end caps have an equal number of facets.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate example
5 embodiments of the invention and together with the description, serve to explain the principles of the invention.

Brief Description of the Drawings

FIG. 1 is a top plan view of a first embodiment of a die, embodying the present
10 invention;

FIG. 2 is an end view of the die of FIG. 1, embodying the present invention;

FIG. 3 is an end view opposite of the FIG. 2 end view, embodying the present
invention;

FIG. 4 is a perspective view of the FIG. 1 embodiment, embodying the present
15 invention;

FIG. 5 is a side elevational view of the die of FIG. 1, embodying the present
invention;

FIG. 6 is a perspective view of a second embodiment of a die construction,
embodying the present invention;

20 FIG. 7 is an end view of the die of FIG. 6, embodying the present invention;

FIG. 8 is a side elevational view of the die of FIG. 6, embodying the present
invention;

FIG. 9 is a side elevational view of the die construction of FIG. 6, embodying
the present invention;

25 FIG. 10 is a perspective view of a third embodiment of a die construction,
embodying the present invention;

FIG. 11 is an end view of the die construction depicted in FIG. 10, embodying
the present invention;

FIG. 12 is a side elevational view of the die construction depicted in FIG. 10,
30 embodying the present invention; and

FIG. 13 is a side elevational view, similar to that depicted in FIG. 12, but rotated, embodying the present invention.

Detailed Description of the Preferred Embodiments

5 Reference will now be made in detail to the present preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings.

 In accordance with the invention, the invention is directed to a die construction. As embodied herein, a first embodiment of a die construction is shown generally in FIGS. 1-5 at 20. Die 20 includes a body construction 22 with a pair of opposite end
10 members or end caps 24, 26. In extension between first and second end caps 24, 26 is a display member or extension member 28.

 Extension member 28 functions to display indicia such as polka dots, or numbers or digits 30. The indicia 30 displayed is indicative of the number generated after rolling die construction 20.

15 The extension member 28 includes a plurality of discrete facets 32. Preferably, each of the discrete facets 32 are identically shaped and have equal surface areas to each other. That is, each of facets 32 has a surface area which is equal to and no greater and no less than the surface area of any other of the facets 32. Each of facets 32 is angled relative to an adjacent facet 32 to define corner or edge surfaces 34. Each of facets 32 is
20 angled relative to its adjacent facet 32 at an equal angle as every other angle between facets 32. In this particular embodiment, there are six facets 32 and no more than six facets. That is, in the embodiment illustrated in FIGS. 1-5, extension member 28 consists essentially of six facets 32. The angle between adjacent facets 32 is, therefore, 60°. That is, the angle between each adjacent facet 32 is equal to 360° divided by the
25 total number of facets in the extension member 28. Because there are a total number of six facets 32 in extension member 28, the angle between each adjacent facet 32 is 360° divided by six, which is 60°.

 Preferably, each of the extension member facets 32 is configured and arranged to display clear, readable indicia. In particular, the shape of each of facets 32 is
30 advantageous over existing die constructions in that facets 32 allow for the display of a

larger, more legible number or indicia 30. While a variety of working embodiments are contemplated, in the illustrated embodiment, facets 32 have a tapered shape and configuration. That is, facets 32 are not rectangular. Preferably, facets 32 are triangular-shaped. That is, facets 32 have no more than three sides, each side being a straight edge. In other words, facets 32 are defined by, and bordered by, an outer periphery, which consists essentially of three straight sides. This provides for a triangular-shaped facet 32.

In reference now to FIG. 2, the first end cap 24 is illustrated. The first end cap 24 includes a plurality of discrete facets 36. In particular, first end cap 24 includes one-half of the number of facets of the extension member 28. In the illustrated embodiment, the extension member 28 has six facets 32. Therefore, the first end cap has three discrete facets, and no more than three facets 36. In other words, first end cap 24 consists essentially of three facets 36. Stated another way, the ratio of the number of facets of the extension member to the number of facets of the first end cap is 2:1.

Each of the first end cap facets 36 is identically shaped to every other facet 36 of the first end cap. Further, each of the first end cap facets 36 has a surface area equal to the surface area of every other facet 36 of the first end cap 24.

Each of the first end cap facets 36 is angled relative to an adjacent end cap facet 36 to define corner or edge surfaces 38 therebetween. In the particular embodiment illustrated, each of facets 36 is angled relative to its adjacent facet 36 by an angle of 120° . That is, the angle between adjacent facets 36 is equal to 360° divided by the number of facets, in this case, three. Further, the angle between adjacent facets 36 of the first end cap 24 is equal to two times or twice the angle between adjacent facets 32 of the extension member 28. Stated another way, the ratio of the angle between adjacent facets 32 in the extension member to the angle between adjacent facets 36 in the first end cap 24 is 1:2.

Each of the first end cap facets 36 is non-rectangular and non-circular. Specifically, each of the first end cap facets 36 is tapered. In the particular embodiment illustrated, each of the first end cap facets 36 is triangular-shaped. That is, each of the first end cap facets is defined by, or bordered by, a periphery of three connected straight

edges. In this way, the first end cap facets 36 are defined by a triangular border, consisting essentially of three straight edges.

In reference now to FIG. 3, the second end cap 26 is illustrated. Second end cap 26 is shaped identically to the first end cap 24. That is, second end cap 26 includes
5 three discrete facets 40, identically shaped to each other, and identically shaped as first end cap facets 36. As with the first end cap 24, the second end cap 26 has the three facets 40, and has no more than the three facets 40. Also as with the first end cap 24, the second end cap 26 includes half of the number of facets as the number of facets 32 of the extension member 28, i.e., the ratio of facets of the extension member 28 to facets
10 of the second end cap 26 is 2:1.

Second end cap facets 40 are angled relative to adjacent facets 40 to define corners or edges 42 therebetween. As with the first end cap 24, the second end cap 26 is arranged such that the angle between adjacent facets 40 is equal to 360° divided by the number of facets (three, in the illustrated example). Therefore, second end cap facets 40
15 define an angle of 120° with the adjacent second end cap facet 40.

As mentioned above, second end cap facets 40 are identical in shape and appearance to first end cap facets 36, in the illustrated embodiment. As such, second end cap facets 40 are tapered. In particular, second end cap facets 40 are triangular-shaped, preferably having three non-curved, straight sides.

Referring again to FIG. 1, it can be seen that first end cap facets 36 are out of
20 phase with second end cap facets 40. That is, the first end cap facets 36 are oriented relative to the second end cap facets 40 in an unsynchronized manner; they are not in correlation with each other. As can be seen in FIG. 1, one total facet 40 of the second end cap 26 is visible, while, in the same view, two skewed views of facets 36 of the first end cap 24 are visible.
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The inventor has discovered that the configuration of the die 20 is advantageous. In particular, the shape of the end caps 24, 26 provides for more bounce when dropping die 20 onto a surface. That is, to generate a random number, the user holds die 20 above a surface at a sufficient distance, such that when die 20 is dropped onto the surface, die
30 20 rolls before eventually resting upon one of the facets 32 of the extension member 28.

The number or indicia 30 displayed on the facet 32 which is in the uppermost position is the number which has been randomly generated. The shapes of the end caps 24, 26 provide for more bounce and randomness when die 20 is dropped onto a surface. The tapered, triangular shapes of end caps 24, 26 provide for surfaces which can abut and engage the surface on which die 20 is being dropped, to create a more interesting and amusing outcome.

Die 20 is constructed such that the center of mass of die 20 is in the precise center of symmetry of die 20. By "center of symmetry", it is meant a point that is related to a geographical figure in such a way that for any point on the figure, there is another point on the figure such that a straight line joining the two points is bisected by the original point. Each of the surface areas of discrete facets 32 of extension member 28 are equal. The combination of the center of symmetry being the center and the equal surface areas of facets 32 provides for a fair playing die. That is, no one facet 32 is more likely to be rolled than any other of the facets 32.

Preferably, each of the facets 32 has a surface area of about 0.0089 to 0.89 sq. in., typically about 0.089 sq. in.. Preferably, each of the first end cap facets 36 has a surface area of about 0.0033 to 0.33 sq. in., typically about 0.033 sq. in.. As such, the ratio of the surface area of the extension member facets 32 to the surface area of each of the first end cap facets 36 is about 2.7:1. The second end cap facets 40 are identical to the first end cap facets 36. Therefore, the second end cap facets 40 each have a surface area of about 0.0033 to 0.33 sq. in., typically about 0.033 sq. in. The ratio of the surface area of the facets 32 of the extension member 28 to the surface area of each of the second end cap facets 40 is about 2.7:1.

Die 20 is useful for generating a random number. In the illustrated embodiment, there are six discrete facets 32 on the extension member 28. Each of the facets 32 has indicia 30 thereon, and in the illustrated embodiment, this indicia 30 is a numerical integer from one to six, inclusive. Upon shaking or rolling the die 20, die 20 will bounce and roll around, before landing on one of its facets 32. The facet 32 in the up position indicates the number which has been generated.

It should also be noted that the number of discrete facets 36 of the first end cap 24 is equal to one-fourth of the total number of discrete facets on the die 20. The total number of facets on die 20 is equal to the number of facets 32 of the extension member 28, plus the number of facets 36 of the first end cap 24, plus the number of facets 40 of the second end cap 26. In the embodiment of FIGS. 1-5, there are total of 12 facets (six plus three plus three = 12). The number of facets on the first end cap 24 is equal to twelve divided by four, which is three. Analogously, the number of facets 40 of the second end cap 26 is equal to one-fourth of the total number of facets of the die 20. The total number of facets of the first embodiment of FIGS. 1-5 is 12. Therefore, the number of facets of the second end cap 40 is three ($12/4=3$).

Preferably, the die 20 is constructed from any rigid material which holds its shape. Examples of suitable materials include glass, crystalline structure, and plastic.

Attention is now directed to FIGS. 6-9. In FIGS. 6-9, a second embodiment of a die is shown generally at 50. Die 50 is constructed analogously to die 20. That is, die 50 includes a first end cap 52, a second end cap 54, and an extension member 56 in extension therebetween. In this embodiment, however, extension member 56 defines 10, and no more than 10, discrete facets 58.

Each of facets 58 includes indicia 60 thereon, indicating a number. As with the first embodiment, facets 58 of die 50 are tapered in order to more clearly display indicia 60. In particular, facets 58 are triangular-shaped.

First end cap 52 is constructed analogously to first end cap 24. First end cap 52 includes a number of facets 62, which is equal to one-half of the number of facets 58 of the extension member 56. Specifically, first end cap 52 has five discrete facets 62, and no more than five facets 62. First end cap facets 62 are triangular-shaped. Each of first end cap facets 62 is angled relative to an adjacent end cap facet 62 to define an angle of 72° between each.

Second end cap 54 is identical to first end cap 52. Second end cap 54 has five discrete facets 64. Each of facets 64 is triangular in shape, and is angled 72° with respect to an adjacent facet 64.

As similarly described with respect to the first embodiment, in this embodiment the facets 62 on the first end cap 52 are out of phase with the facets 64 on the second end cap 54.

Preferably, the surface area of each of facets 58 of extension member 56 is about 5 0.0106 to 1.06 sq. in., typically about 0.106 sq. in.. The surface area of each of first end cap facets 62 is about 0.0046 to 0.46 sq. in., typically about 0.046 sq. in.. Second end cap facets 64 are identical to first end cap facets 62. As such, each of second end cap facets 64 has a surface area of about 0.0046 to 0.46 sq. in., typically about 0.046 sq. in. The ratio of the surface area of one facet 58 to one facet 62 is about 2.3:1. This is the 10 same ratio as the ratio of facet 58 to facet 64.

As with the first embodiment of the die, die 50 is constructed so that the center of mass is in the precise geometric center of die 50. Further, each of facets 58 has an identical and equal surface area. This provides for a fair playing die.

Die 50 has a total of 20 facets. That is, extension member 56 has ten facets, first 15 end cap has five facets, and second end cap has five facets. Therefore, the total number of facets is: $10 + 5 + 5 = 20$. The number of facets of each of the first and second end caps 52, 54 is equal to one-fourth of the total number of facets of die 50. Thus, since there are a total of 20 facets, the number of facets of first end cap 52 can be derived by dividing by four, which is five. Analogously, the number of facets of the second end 20 cap 54 may be derived by dividing the total number of facets (20) by four, which is five.

Die 50 is used analogously as die 20. That is, die 50 is dropped at a height above a surface sufficient to cause die 50 to roll around. Ultimately, die 50 will rest upon one of its extension member facets 58. This will leave one of its extension member facets 58 in the uppermost position. The number displayed on the facet in the 25 uppermost position is the number generated. In the example illustrated, this would be an integer from 1 through 10, inclusive.

Attention is now directed to FIGS. 10-13. In FIGS. 10-13, a third embodiment of a die is shown generally at 70. Die 70 is constructed analogously to die 20 and die 50. That is, die 70 includes a first end cap 72, a second end cap 74, and an extension

member 76 in extension therebetween. In this embodiment, however, extension member 76 defines 20, and no more than 20, discrete facets 78.

Each of facets 78 includes indicia 80 thereon, indicating a number. As with the first and second embodiments, facets 78 of die 70 are tapered in order to more clearly display indicia 80. In particular, facets 78 are triangular-shaped.

First end cap 72 is constructed analogously to first end cap 24 (FIG. 1) and first end cap 52 (FIG. 6). First end cap 72 includes a number of facets 82, which is equal to one-half of the number of facets 78 of the extension member 76. Specifically, first end cap 72 has ten discrete facets 82, and no more than ten facets 82. First end cap facets 82 are triangular-shaped. Each of first end cap facets 82 is angled relative to an adjacent end cap facet 82 to define an angle of 36° between each.

Second end cap 74 is identical to first end cap 72. Second end cap 74 has ten discrete facets 84. Each of facets 84 is triangular in shape, and is angled 36° with respect to an adjacent facet 84.

As described with respect to the first and second embodiments, in this embodiment, the facets 82 on the first end cap 72 are out of phase with the facets 84 on the second end cap 74.

Preferably, the surface area of each of facets 78 of extension member 76 is about 0.0116 to 1.16 sq. in., typically about 0.116 sq. in. The surface area of each of first end cap facets 82 is about 0.0056 to 0.56 sq. in., typically about 0.056 sq. in. Second end cap facets 84 are identical to first end cap facets 82. As such, each of second end cap facets 84 has a surface area of about 0.0056 to 0.56 sq. in., typically about 0.056 sq. in. The ratio of the surface area of one facet 78 to one facet 82 is about 2.06:1. This is the same ratio as the ratio of facet 78 to facet 84.

As with the first and second embodiments of the die, die 70 is constructed so that the center of mass is in the precise geometric center of die 70. Further, each of facets 78 has an identical and equal surface area. This provides for a fair playing die.

Die 70 has a total of 40 facets. That is, extension member 76 has twenty facets, first end cap has ten facets, and second end cap has ten facets. Therefore, the total number of facets is: $20 + 10 + 10 = 40$. The number of facets of each of the first and

second end caps 72, 74 is equal to one-fourth of the total number of facets of die 70. Thus, since there are a total of 40 facets, the number of facets of first end cap 72 can be derived by dividing by four, which is ten. Analogously, the number of facets of the second end cap 74 may be derived by dividing the total number of facets (20) by four, which is ten.

Die 70 is used analogously as die 20 and die 50. That is, die 70 is dropped at a height above a surface sufficient to cause die 70 to roll around. Ultimately, die 70 will rest upon one of its extension member facets 78. This will leave one of its extension member facets 78 in the uppermost position. The number displayed on the facet in the uppermost position is the number generated. In the example illustrated, this would be an integer from 1 through 20, inclusive.

Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. In particular, one skilled in the art will understand that die constructions having extension member facets totaling 8, 12, 30 and other even multiples can be constructed according to the principles taught herein.

It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

I claim:

1. A die construction comprising:
 - (a) a body having first and second, opposite end caps and an extension member therebetween;
 - (b) said extension member having a first number of discrete facets and no more than said first number;
 - (i) each of said discrete facets being identically shaped and having equal surface areas;
 - (c) said first end cap having a second number of discrete facets and no more than said second number; said second number being one-half of said first number;
 - (i) each of said first end cap discrete facets being identically shaped and having equal surface areas; and
 - (d) said second end cap having said second number of discrete facets and no more than said second number;
 - (i) each of said second end cap discrete facets being shaped identically as said first end cap discrete facets; and each of said second end cap discrete facets having a surface area equal a surface area of each of said first end cap discrete facets; and
2. A die construction according to claim 1, wherein:
 - (a) each of said extension member discrete facets include printed indicia thereon.
3. A die construction according to claim 2, wherein:
 - (a) each of said extension member discrete facets is tapered.
4. A die construction according to claim 3, wherein:
 - (a) each of said extension member discrete facets is triangular-shaped.

5. A die construction according to claim 4, wherein:
 - (a) each of said first end cap discrete facets and said second end cap discrete facets is tapered.
6. A die construction according to claim 5, wherein:
 - (a) each of said first end cap discrete facets and said second end cap discrete facets is triangular-shaped.
7. A die construction according to claim 6, wherein:
 - (a) said first number is six; and said second number is three.
8. A die construction according to claim 7, wherein:
 - (a) each of said extension member discrete facets has a surface area of about 0.0089-0.89 sq. in.
9. A die construction according to claim 8, wherein:
 - (a) each of said first end cap discrete facets has a surface area of about 0.0033-0.33 sq. in.; and
 - (b) each of said second end cap discrete facets has a surface area of about 0.0033-0.33 sq. in.
10. A die construction according to claim 6, wherein:
 - (a) said first number is ten; and said second number is five.
11. A die construction according to claim 10, wherein:
 - (a) each of said extension member discrete facets has a surface area of about 0.0106-1.06 sq. in.
12. A die construction according to claim 11, wherein:

- (a) each of said first end cap discrete facets has a surface area of about 0.0046-0.46 sq. in.; and
 - (b) each of said second end cap discrete facets has a surface area of about 0.0046-0.46 sq. in.

- 13. A die construction according to claim 6, wherein:
 - (a) said first number is twenty; and said second number is ten.

- 14. A die construction according to claim 13, wherein:
 - (a) each of said extension member discrete facets has a surface area of about 0.0116-1.16 sq. in.

- 15. A die construction according to claim 14, wherein:
 - (a) each of said first end cap discrete facets has a surface area of about 0.0056-0.56 sq. in.; and
 - (b) each of said second end cap discrete facets has a surface area of about 0.0056-0.56 sq. in.

- 16. A die construction according to claim 1, wherein:
 - (a) a ratio of a surface area of each of said extension member facets to a surface area of each of said first end cap discrete facets is about 2-3:1.

- 17. A die comprising:
 - (a) a body including a first end cap, a second end cap, and an extension member in extension therebetween;
 - (b) said first end cap including a first number of facets and no more than said first number; said second end cap including a second number of facets and no more than said second number; and said extension member defining a third number of facets and no more than said third number;

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- (i) said first number being equal to one-fourth of a total of said first number and said second number and said third number;
- (ii) said second number being equal to one-fourth of the total of said first number and said second number and said third number;
- (iii) each of said extension member facets being equal in surface area;
- (iv) each of said extension member facets being triangular-shaped;
- ~~and~~
- (^v/_{iv}) each of said extension member facets having indicia thereon indicating a number; and
- Jan
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18. A die according to claim 17, wherein:

- (a) each of said first end cap facets is triangular-shaped; and
- (b) each of said second end cap facets is triangular-shaped.

19. A die according to claim 17, wherein:

- (a) said third number is six.

20. A die according to claim 17, wherein:

- (a) said first number, said second number, and said third number total 40.

5N09/003246

Abstract of the Disclosure

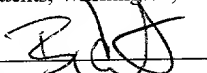
A die construction includes a body having first and second, opposite end caps and an extension member therebetween. The extension member has a first number of discrete facets and no more than the first number. Each of the discrete facets is identically shaped and have equal surface areas. The first end cap has a second number of discrete facets and no more than the second number. The second number is one-half of the first number. Each of the first end cap discrete facets is identically shaped and has an equal surface area to one another. The second end cap has the second number of discrete facets, that is, the same number as the first end cap, and has no more than the second number. Each of the second end cap discrete facets is identically shaped as the first end cap discrete facets. Each of the second end cap discrete facets has a surface area equal to a surface area of each of the first end cap discrete facets.

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: **EM422710970US**

Date of Deposit: **JANUARY 6, 1998**

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869970 " 942E0060

FIG. 4

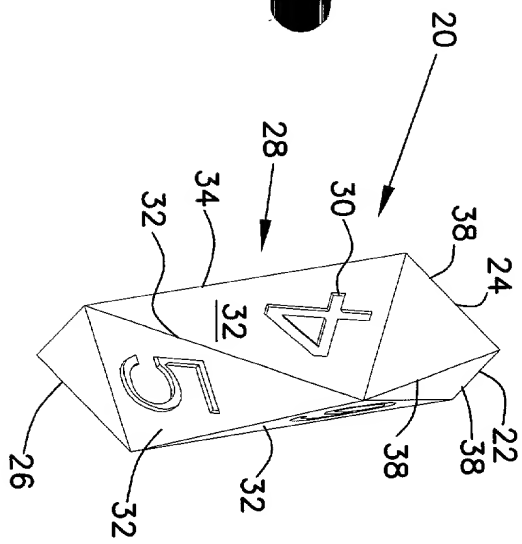


FIG. 2

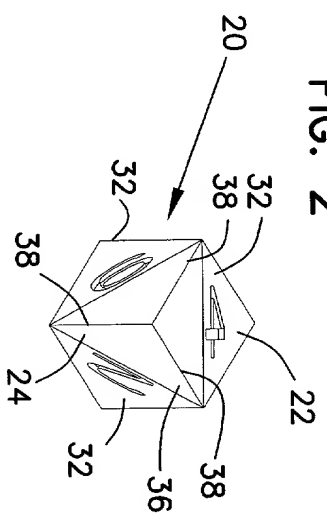


FIG. 1

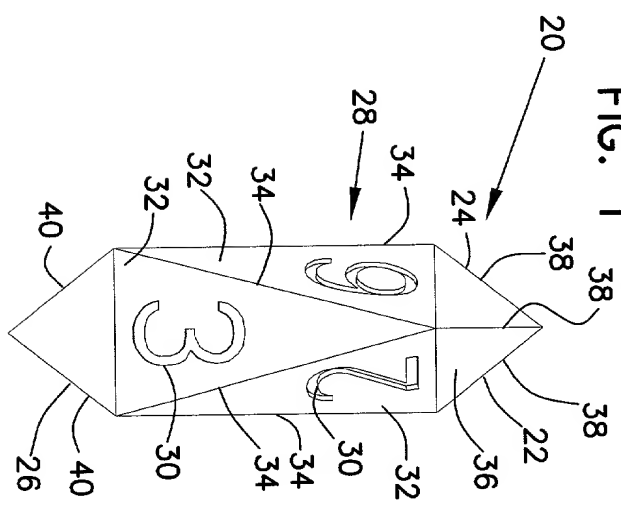


FIG. 3

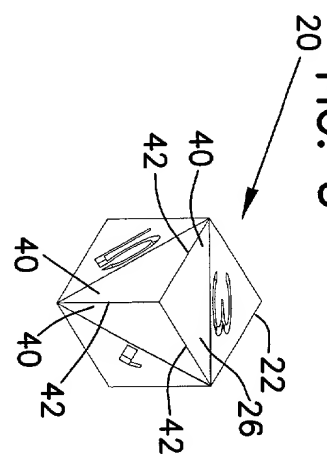
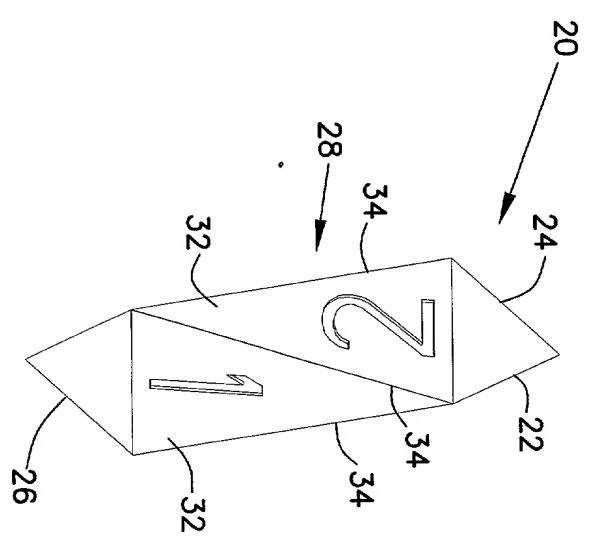


FIG. 5



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FIG. 6

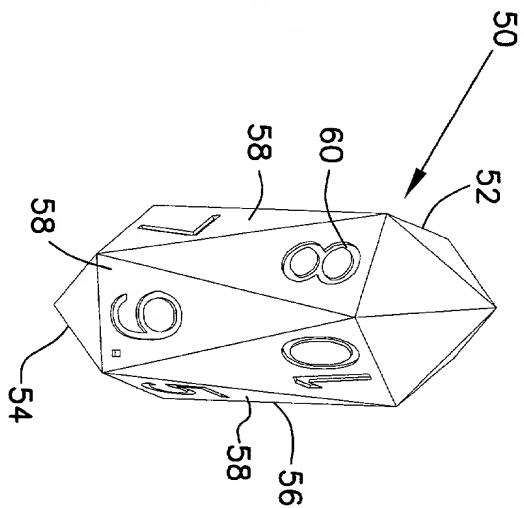


FIG. 7

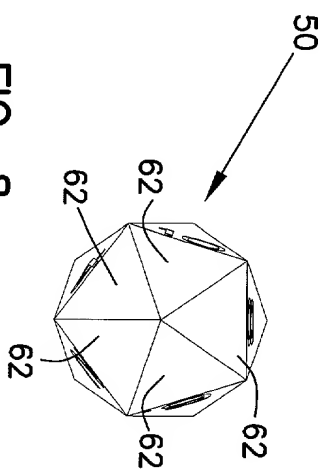


FIG. 8

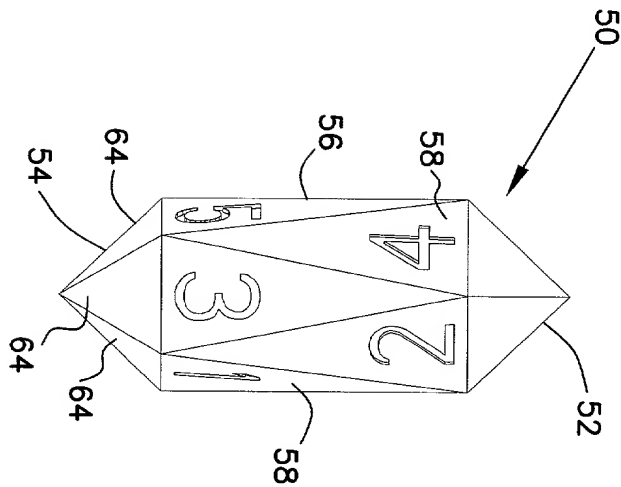
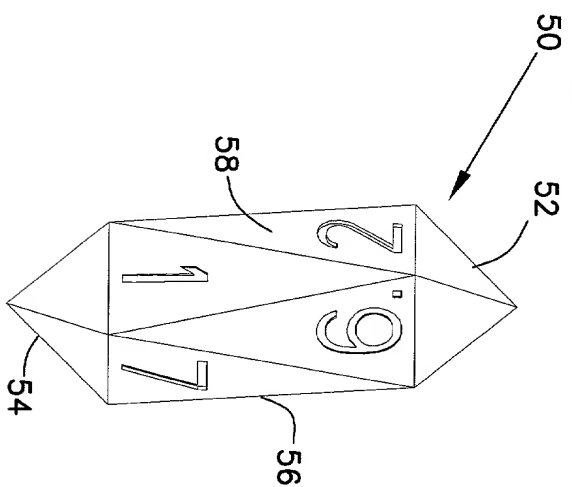


FIG. 9



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FIG. 10

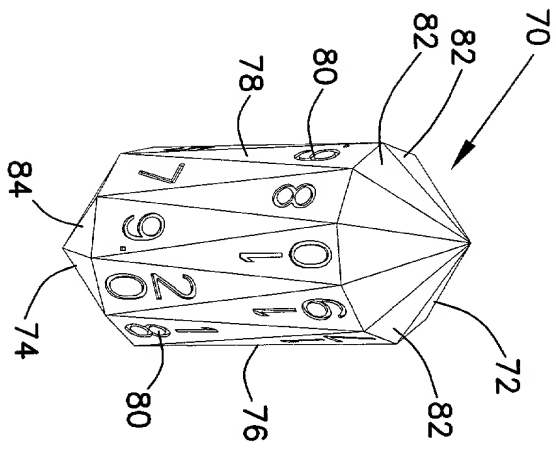


FIG. 11

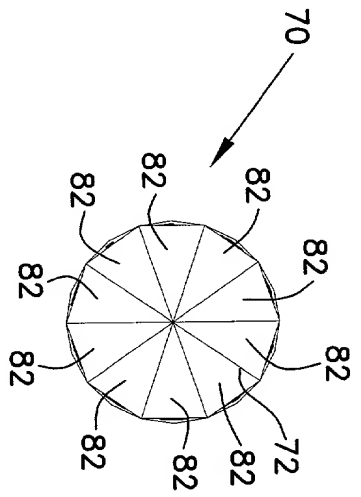


FIG. 12

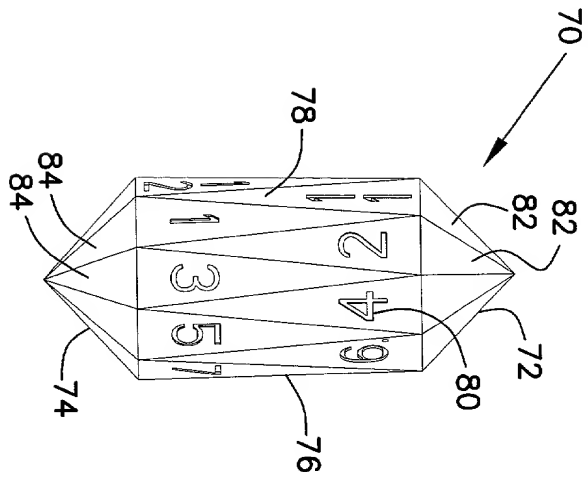
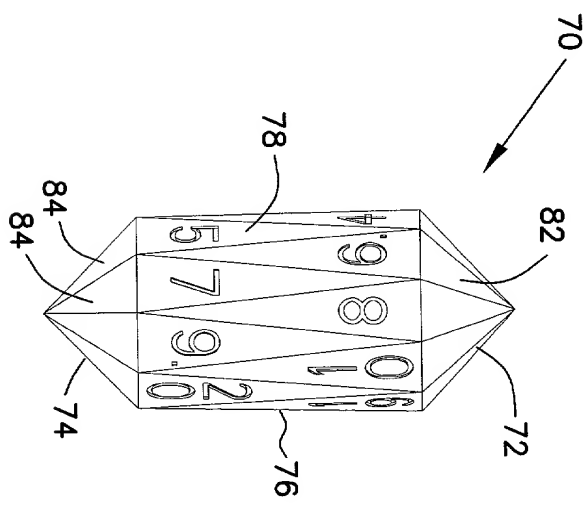


FIG. 13



09003246-010698

United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: RANDOM NUMBER GENERATOR FOR GAME PLAYING AND METHODS

The specification of which

- a. ☒ is attached hereto
b. ☐ was filed on _____ as application serial no. _____ and was amended on _____ (if applicable) (in the case of a PCT-filed application) described and claimed in international no. _____ filed _____ and as amended on _____ (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

- a. ☒ no such applications have been filed.
b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I hereby appoint the following attorney and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

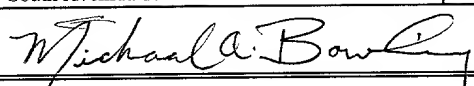
Albrecht, John W.	Reg. No. 40,481	Lacy, Paul E.	Reg. No. 38,946
Batzli, Brian H.	Reg. No. 32,960	Larson, James A.	Reg. No. 40,443
Beard, John L.	Reg. No. 27,612	Lasky, Michael B.	Reg. No. 29,555
Beck, Robert C.	Reg. No. 28,184	Lindquist, Timothy A.	Reg. No. 40,701
Berman, Charles	Reg. No. 29,249	Lynch, David W.	Reg. No. 36,204
Bogucki, Raymond A.	Reg. No. 17,426	Mau, Michael L.	Reg. No. 30,087
Bruess, Steven C.	Reg. No. 34,130	Maunu, Leroy D.	Reg. No. 35,274
Byrne, Linda M.	Reg. No. 32,404	McDaniel, Karen D.	Reg. No. 37,674
Canady, Karen S.	Reg. No. 39,927	McDonald, Daniel W.	Reg. No. 32,044
Carlson, Alan G.	Reg. No. 25,959	McIntyre, Iain A.	Reg. No. 40,377
Carter, Charles G.	Reg. No. 35,093	Mueller, Douglas P.	Reg. No. 30,300
Caspers, Philip P.	Reg. No. 33,227	Nasiedlak, Tyler L.	Reg. No. 40,099
Chiapetta, James R.	Reg. No. 39,634	Nelson, Albin J.	Reg. No. 28,650
Clifford, John A.	Reg. No. 30,247	Orler, Anthony J.	Reg. No. 41,232
Cooper, Victor G.	Reg. No. 39,641	Pauly, Daniel M.	Reg. No. 40,123
Crawford, Robert	Reg. No. 32,122	Plunkett, Theodore	Reg. No. 37,209
Daignault, Ronald A.	Reg. No. 25,968	Pollinger, Steven J.	Reg. No. 35,326
Daley, Dennis R.	Reg. No. 34,994	Pytel, Melissa J.	Reg. No. P-41,512
DalGLISH, Leslie E.	Reg. No. 40,579	Reich, John C.	Reg. No. 37,703
Daulton, Julie R.	Reg. No. 36,414	Reiland, Earl D.	Reg. No. 25,767
DiPietro, Mark J.	Reg. No. 28,707	Rittmaster, Ted R.	Reg. No. 32,933
Edell, Robert T.	Reg. No. 20,187	Schmaltz, David G.	Reg. No. 39,828
Epp Ryan, Sandra	Reg. No. 39,667	Schmidt, Cecil C.	Reg. No. 20,566
Farber, Michael B.	Reg. No. 32,612	Schuman, Mark D.	Reg. No. 31,197
Funk, Steven R.	Reg. No. 37,830	Schumann, Michael D.	Reg. No. 30,422
Gates, George H.	Reg. No. 33,500	Sebald, Gregory A.	Reg. No. 33,280
Glance, Robert J.	Reg. No. 40,620	Sharp, Janice A.	Reg. No. 34,051
Golla, Charles E.	Reg. No. 26,896	Skoog, Mark T.	Reg. No. 40,178
Gorman, Alan G.	Reg. No. 38,472	Smith, Jerome R.	Reg. No. 35,684
Gould, John D.	Reg. No. 18,223	Sumner, John P.	Reg. No. 29,114
Gresens, John J.	Reg. No. 33,112	Sumners, John S.	Reg. No. 24,216
Hamre, Curtis B.	Reg. No. 29,165	Tellekson, David K.	Reg. No. 32,314
Hillson, Randall A.	Reg. No. 31,838	Underhill, Albert L.	Reg. No. 27,403
Hollingsworth, Mark A.	Reg. No. 38,491	Vandenburgh, J. Derek	Reg. No. 32,179
Johnston, Scott W.	Reg. No. 39,721	Victor, David W.	Reg. No. 39,867
Kastelic, Joseph M.	Reg. No. 37,160	Welter, Paul A.	Reg. No. 20,890
Kettelberger, Denise	Reg. No. 33,924	Williams, Douglas J.	Reg. No. 27,054
Komanduri, Janaki	Reg. No. 40,684	Wood, Gregory B.	Reg. No. 28,133
Kowalchyk, Alan W.	Reg. No. 31,535	Xu, Min S.	Reg. No. 39,536
Kowalchyk, Katherine M.	Reg. No. 36,848		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Merchant, Gould, Smith, Edell, Welter & Schmidt to the contrary.

Please direct all correspondence in this case to Merchant, Gould, Smith, Edell, Welter & Schmidt at the address indicated below:

Merchant, Gould, Smith, Edell,
Welter & Schmidt
3100 Norwest Center
90 South Seventh Street
Minneapolis, MN 55402-4131

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2	Full Name Of Inventor	Family Name BOWLING	First Given Name Michael	Second Given Name A.
0	Residence & Citizenship	City Tucson	State or Foreign Country Arizona	Country of Citizenship U.S.A.
1	Post Office Address	Post Office Address 7931 South Avenida de Pina	City Tucson	State & Zip Code/Country AZ/85747/USA
Signature of Inventor 201:			Date:	
			12-31-97	

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§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;
 - or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
- (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.